

Proposed Special Condition on Airworthiness Standards for CS-22 Sailplanes with hand rudder control

Introductory Note:

The hereby presented Special condition has been classified as an important Special Condition and as such shall be subject to public consultation, in accordance with EASA Management Board Decision 12/2007 dated 11 September 2007, Article 3 (2.), which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

Statement of Issue:

The applicability of CS-22 is limited to sailplanes where the rudder is controlled by rudder pedals. In accordance with 21.A.16B this Special Condition establishes additional requirements for sailplanes with hand rudder control. The applicability is limited to sailplanes with single seat, or two-seat tandem configuration, only.

Background:

The installation of hand rudder controls to sailplanes and is quite common and in operation for some decades already. This Special Condition continues with the concept, arrangement, and operation of the designs approved in the past. This is to provide pilots with reduced mobility with a standardised cockpit and control arrangement across the different models of sailplanes.

The logic of the control movements has been found to be in opposite direction in the majority of aeroplanes. Hence, the applicability excludes site-by-site seating configurations. This is to allow a harmonised approach for Touring Motor Glider, as defined in FCL.010, which can be operated by both, sailplane and aeroplane pilots.



Special Condition:

Considering all above the following Special Condition is proposed:

SPECIAL CONDITION SC-D22-D01**CS-22 Sailplanes with hand rudder control****Introduction:**

The requirements below apply in addition to the applicable requirements of the original certification basis. For instance, point 22.777 including AMC applies to the hand rudder control to its full extend.

Applicability:

Sailplanes with single seat, or two-seat tandem configuration, only.

SC-D22.01 Allowed control forces

22.143 (c) is amended as following. The table reads in addition in a) temporary application, Yaw, 20 daN, and in b) prolonged application, Yaw, 2 daN.

SC-D22.02 Loads resulting from limit pilot forces

22.397 (a) is amended as following. The table indicating forces reads in row "Rudder" in addition 35 daN, Push and Pull handgrip of rudder control lever.

SC-D22.02 New requirement

The following new requirement is introduced:

- (a) For operation of the sailplane by pilots with reduced mobility, a hand rudder control may be installed. Such control must be in addition to the feet rudder control and must not impair the operation of the feet rudder control.
- (b) The lever of the hand rudder control must be dismountable for flights with pilots who are using the feet rudder control.
- (c) The controls of the air brakes must be designed in a way that a selected air brake deflection remains, while hands-off. Such design must not impair the control of the air brakes from any other seat, in case of two-seat sailplanes.
- (d) In case the sailplane is equipped with a wheel brake, it must be possible for the pilot to control the wheel brake with the left or right hand.

AMC to SC-D22.02 (c)

Some gated positions within the full deflection of the air brakes providing the pilot with sufficient controllability of the sailplane for descend and landing, is sufficient to comply with SC-D22.02 (b).

SC-D22.03 Motion and effect of cockpit control

22.779 is amended as following.

New row "Hand rudder control", "rewards for nose right"

SC-D22.04 Colour marking and arrangement of cockpit controls

22.780 is amended as following.

New row "Hand rudder control", "same colour as handgrip of control stick", "for left hand operation".

SC-D22.05 Control markings

22.1555 is amended as following:

The hand rudder control must be clearly marked by placards indicating the motion and effect of the control.

AMC to SC-D22.05:

13 Hand rudder control

